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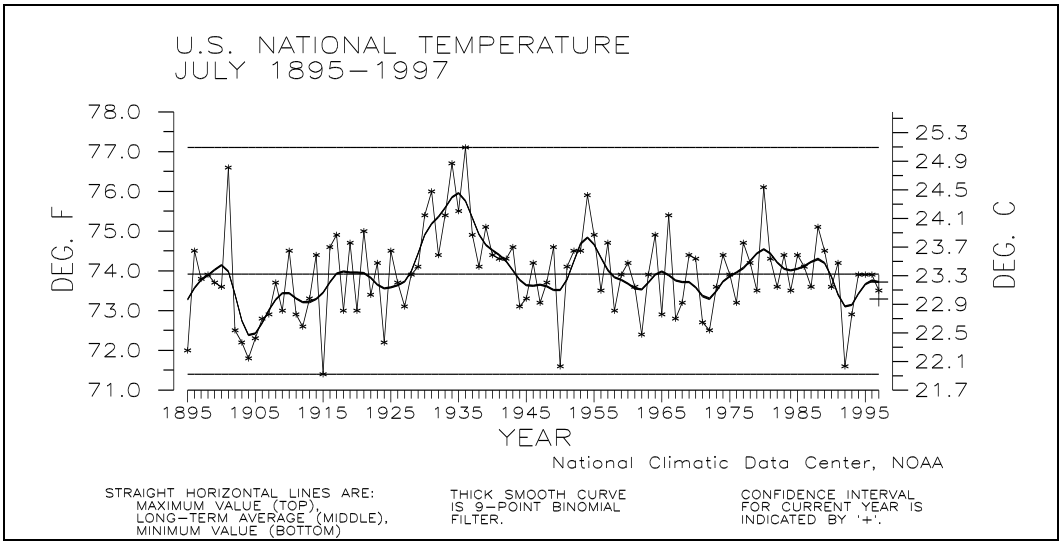
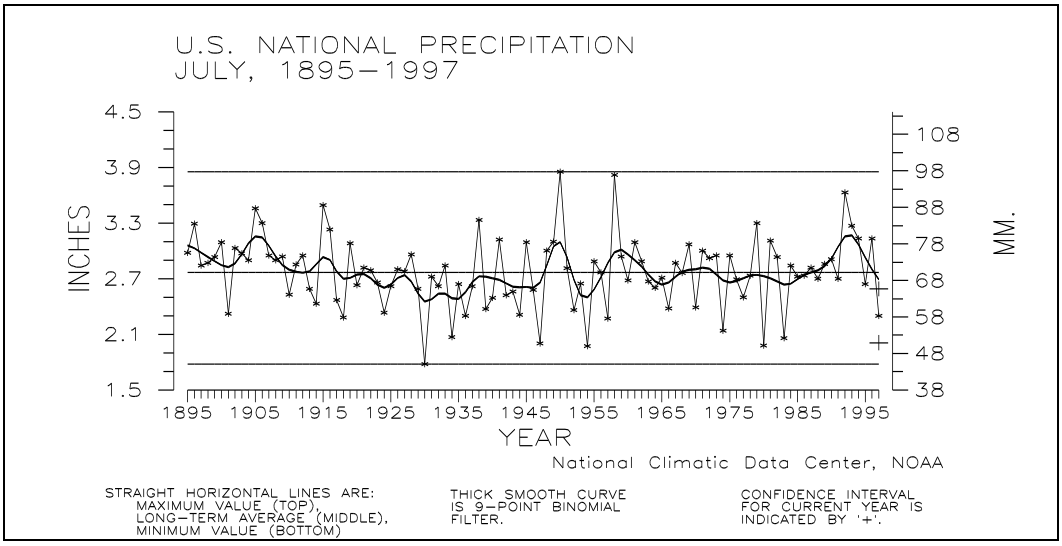
Volume 9 Number 7

CLIMATE VARIATIONS BULLETIN





noaa NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION / NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE / NATIONAL CLIMATIC DATA CENTER ASHEVILLE, N.C.

This CLIMATE VARIATIONS BULLETIN (CVB) is a preliminary report that puts current monthly climate anomalies into historical perspective using climate databases archived at the National Climatic Data Center (NCDC). It is issued on a monthly basis. Supplemental sections are included which address seasonal and annual perspectives, when appropriate.

Current data are based on preliminary reports from River Forecast Center stations and First and Second Order airport stations obtained from the National Weather Service (NWS) Climate Prediction Center (formerly, Climate Analysis Center), and preliminary tornado statistics obtained from the NWS National Severe Storms Forecast Center. THE CURRENT DATA SHOULD BE USED WITH CAUTION. These preliminary data are useful for estimating how current anomalies compare to the historical record, however the actual values and rankings for the current year will change as the final data arrive at NCDC and are processed.

The following NCDC datasets are used for the historical data: the climate division drought database (TD-9640), the hurricane datasets (TD-9636 and TD-9697), the tornado dataset (STORM DATA), and the monthly station dataset (LCD supplemental files). It should be noted that the climate division drought database consists of monthly data for 344 climate divisions in the contiguous United States. These divisional values are calculated from the 6000+ station Cooperative Observer network.

If you have access to the Internet, copies of the CVB are available via both the NCDC's World Wide Web (WWW) server and the NCDC's anonymous FTP server.

NCDC's WWW server
URL for the CVB: http://www.ncdc.noaa.gov/publications/cvb/cvb.html

NCDC's anonymous FTP server
Machine: ftp.ncdc.noaa.gov
Directory: /pub/data/cvb

If you are a climate researcher and would like to order copies of the historical datasets used to make graphs of the type in this report, call 704-271-4994 or fax a letter to 704-271-4876 or mail a letter to the address given below, ATTN: Research User Services.

All other questions or requests for data should be made by calling 704-271-4800 or sending a fax to 704-271-4876 or by writing to:

National Climatic Data Center, NOAA
Federal Building
151 Patton Avenue, Room 120
Asheville, NC 28801-5001

If you use any of the information from this CVB, please identify "National Climatic Data Center, NOAA" as the source.

UNITED STATES JULY CLIMATE IN HISTORICAL PERSPECTIVE

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TABLE 1. PRECIPITATION AND TEMPERATURE RANKS, BASED ON THE PERIOD 1895-1997. 1 = DRIEST/COLDEST, 103 = WETTEST/WARMEST FOR JULY 1997, 103 = WETTEST/WARMEST FOR JUN-JUL 1997, 103 = WETTEST/WARMEST FOR FEB-JUL 1997, 102 = WETTEST/WARMEST FOR AUG 1996-JUL 1997.

REGION	JULY 1997	JUN-JUL 1997	FEB-JUL 1997	AUG 1996-JUL 1997
PRECIPITATION:				
NORTHEAST	6	2	8	63
EAST NORTH CENTRAL	64	53	19	48
CENTRAL	2	13	21	41
SOUTHEAST	46	44	38	71
WEST NORTH CENTRAL	87	77	50	86
SOUTH	13	46	75	92
SOUTHWEST	15	18	20	56
NORTHWEST	91	92	82	102
WEST	66	100	6	71
NATIONAL	10	31	29	93
TEMPERATURE:				
NORTHEAST	28	44	54	59
EAST NORTH CENTRAL	32	56	47	21
CENTRAL	40	31	42	22
SOUTHEAST	59	12	55	36
WEST NORTH CENTRAL	46	75	73	25
SOUTH	51	32	30	20
SOUTHWEST	41	50	78	80
NORTHWEST	29	43	78	77
WEST	34	51	95	94
NATIONAL	32	38	66	38

TABLE 2. EXTREMES, 1961-90 NORMALS, AND 1997 VALUES FOR JULY. IT SHOULD BE NOTED THAT THE 1997 VALUES WILL CHANGE WHEN THE FINAL DATA ARE PROCESSED.

PRECIPITATION (INCHES)

REGION	DRIEST VALUE	DRIEST YEAR	WETTEST VALUE	WETTEST YEAR	NORMAL PCPN	1997 PCPN
NORTHEAST	2.02	1968	6.57	1897	3.81	2.54
EAST NORTH CENTRAL	.85	1936	6.13	1993	3.61	3.73
CENTRAL	1.47	1930	8.27	1958	4.25	2.02
SOUTHEAST	2.94	1983	11.55	1916	5.56	5.56
WEST NORTH CENTRAL	.84	1917	5.56	1993	2.02	2.58
SOUTH	1.34	1980	6.04	1950	3.03	2.07
SOUTHWEST	1.00	1993	3.51	1911	1.83	1.25
NORTHWEST	.16	1953	2.05	1983	.73	1.14
WEST	.00	1903	1.18	1984	.34	.32
NATIONAL	1.78	1930	3.85	1950	2.74	2.30*

* PRELIMINARY VALUE, CONFIDENCE INTERVAL + OR - .29 INCHES

TEMPERATURE (DEGREES F)

REGION	COLDEST VALUE	COLDEST YEAR	WARMEST VALUE	WARMEST YEAR	NORMAL TEMP	1997 TEMP
NORTHEAST	66.1	1962	73.8	1955	69.3	68.6
EAST NORTH CENTRAL	64.0	1992	76.2	1936	70.2	68.9
CENTRAL	71.9	1947	81.2	1901	75.3	75.2
SOUTHEAST	76.3	1947	82.7	1993	78.6	79.2
WEST NORTH CENTRAL	62.7	1915	77.4	1936	69.5	68.7
SOUTH	78.0	1906	85.9	1980	81.3	81.4
SOUTHWEST	70.1	1912	75.9	1901	73.6	72.9
NORTHWEST	58.9	1993	70.6	1906	65.9	65.2
WEST	69.0	1903	78.2	1931	73.8	73.2
NATIONAL	71.4	1915	77.1	1936	73.9	73.5*

* PRELIMINARY VALUE, CONFIDENCE INTERVAL + OR - .2 DEG. F.

TABLE 3.

STATISTICS FOR SELECTED RIVER BASINS: PRECIPITATION RANKING FOR OCT-JUL 1996-97, WHERE RANK OF 1 = DRIEST, 102 = WETTEST, BASED ON THE PERIOD 1895 TO 1997, AREAL PERCENT OF THE BASIN EXPERIENCING SEVERE OR EXTREME LONG-TERM (PALMER) DROUGHT, AND AREAL PERCENT OF THE BASIN EXPERIENCING SEVERE OR EXTREME LONG-TERM (PALMER) WET CONDITIONS, AS OF JULY 1997.
RIVER BASIN REGIONS AS DEFINED BY THE U.S. WATER RESOURCES COUNCIL.

RIVER BASIN	PRECIPITATION RANK	% AREA DRY	% AREA WET
MISSOURI BASIN	54	.0%	32.7%
PACIFIC NORTHWEST BASIN	102	.0%	58.6%
CALIFORNIA RIVER BASIN	73	56.3%	.0%
GREAT BASIN	82	5.8%	.0%
UPPER COLORADO BASIN	70	.0%	.0%
LOWER COLORADO BASIN	21	58.1%	.0%
RIO GRANDE BASIN	63	.0%	21.8%
ARKANSAS-WHITE-RED BASIN	57	.0%	9.5%
TEXAS GULF COAST BASIN	69	.0%	29.7%
SOURIS-RED-RAINY BASIN	61	.0%	8.5%
UPPER MISSISSIPPI BASIN	49	.0%	4.2%
LOWER MISSISSIPPI BASIN	82	.0%	16.2%
GREAT LAKES BASIN	70	.0%	.0%
OHIO RIVER BASIN	26	.0%	.0%
TENNESSEE RIVER BASIN	69	.0%	.0%
NEW ENGLAND BASIN	65	.0%	7.7%
MID-ATLANTIC BASIN	44	3.8%	.0%
SOUTH ATLANTIC-GULF BASIN	55	.0%	.0%

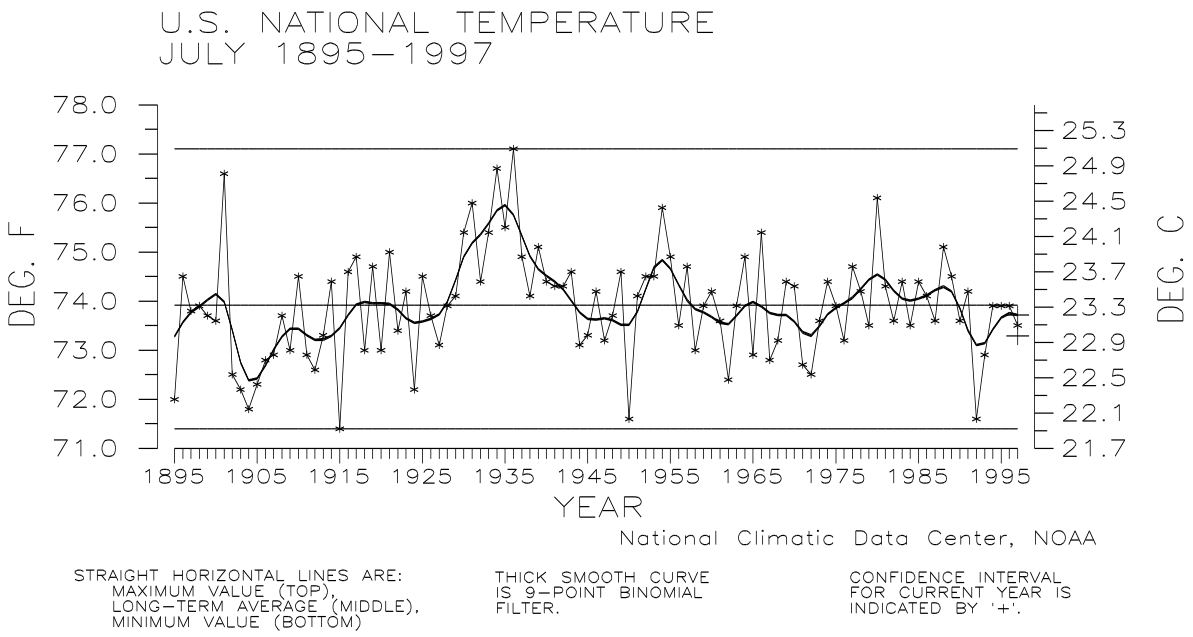

Figure 1: Preliminary data for July 1997 indicate that temperature averaged across the contiguous United States was below the long-term mean ranking as the 32nd coolest July since 1895. Four percent of the country was much cooler than normal while only one percent of the country was much warmer than normal.

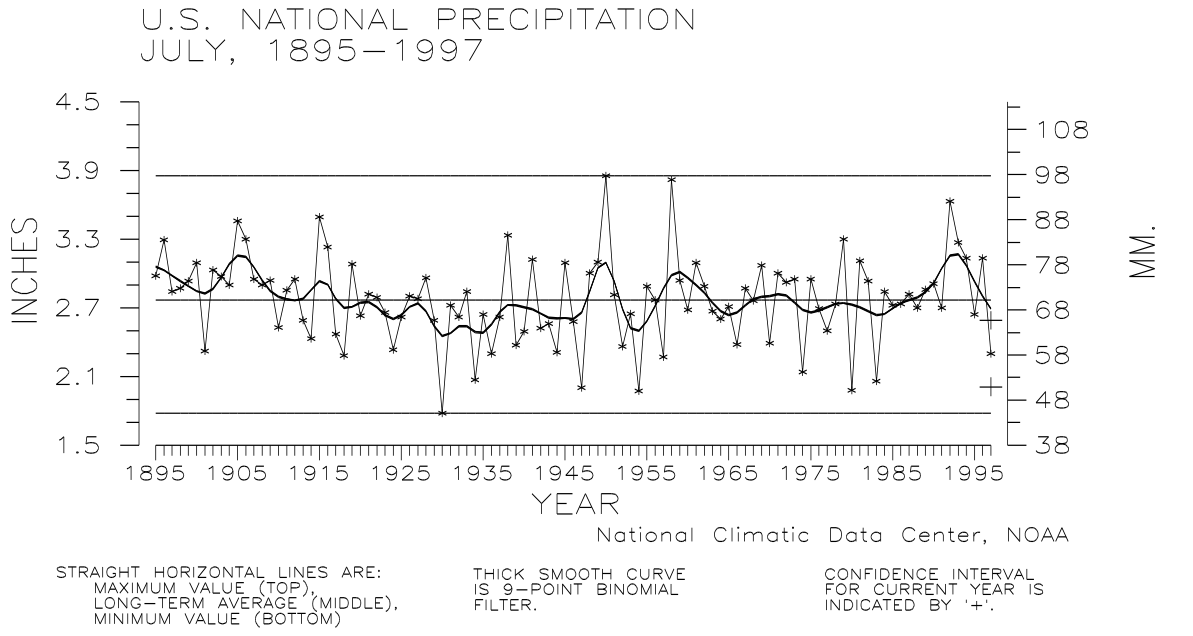

Figure 2: July 1997 was the tenth driest such month since 1895. Over sixteen percent of the country experienced much drier than normal conditions while about nine percent of the country was much wetter than normal.

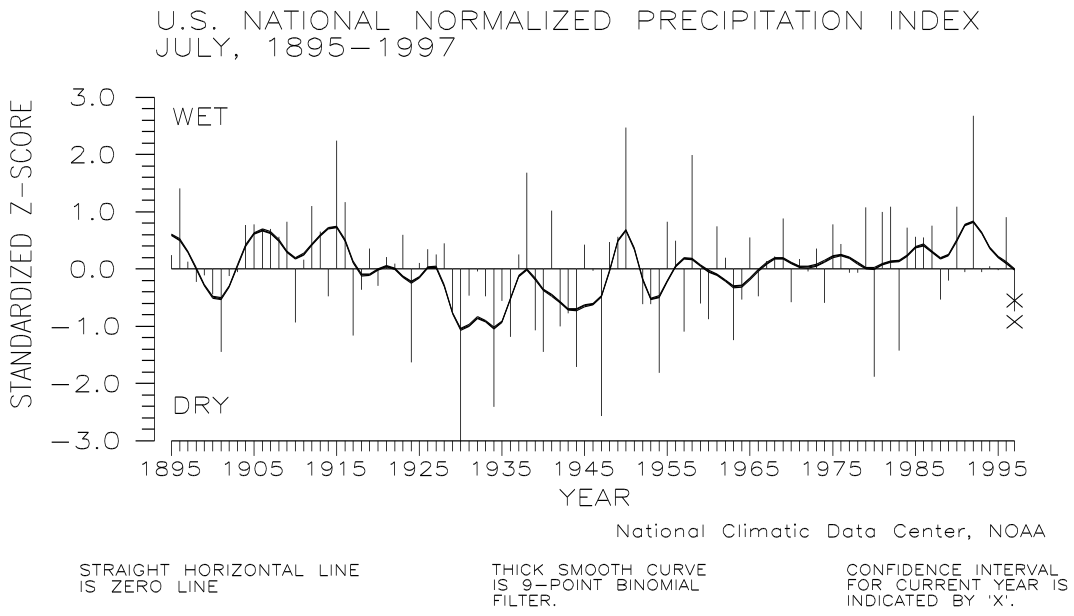

Figure 3: The preliminary national standardized precipitation index ranked July 1997 as the 20th driest such month on record. This standardized z-score is estimated to be accurate to within 0.188 index units and its confidence interval is shown as an 'X'.

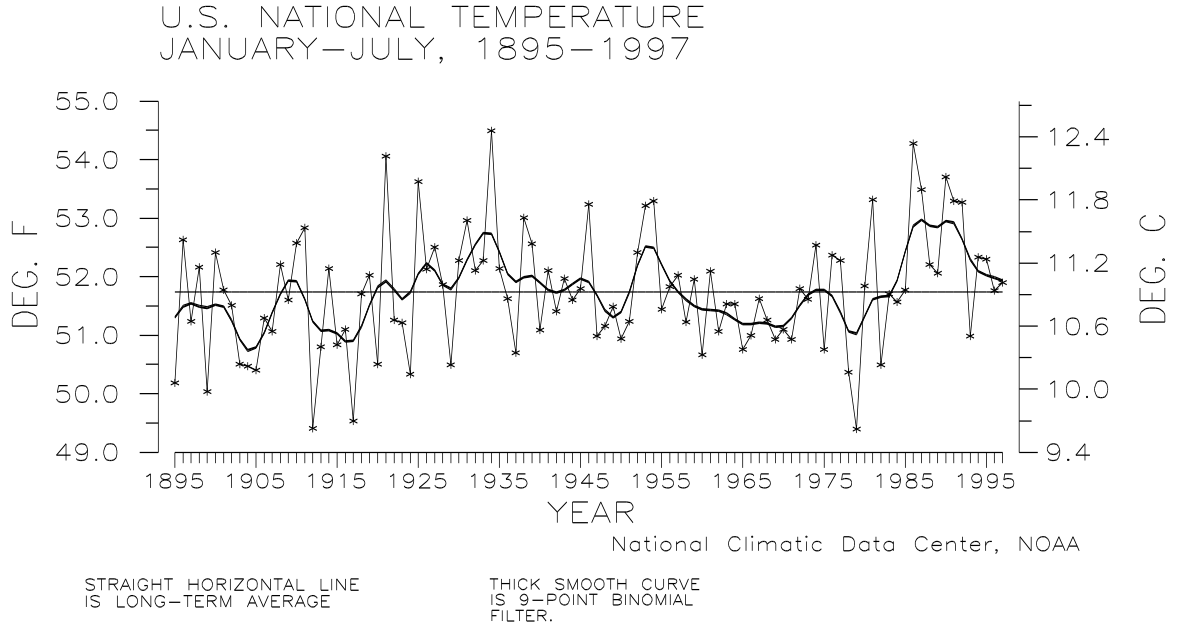

Figure 4: Based upon preliminary data, January-July 1997 was the 43rd warmest such period on record. Over five percent of the country had much warmer than normal January-July temperatures while about eight percent of the country was much cooler than normal.

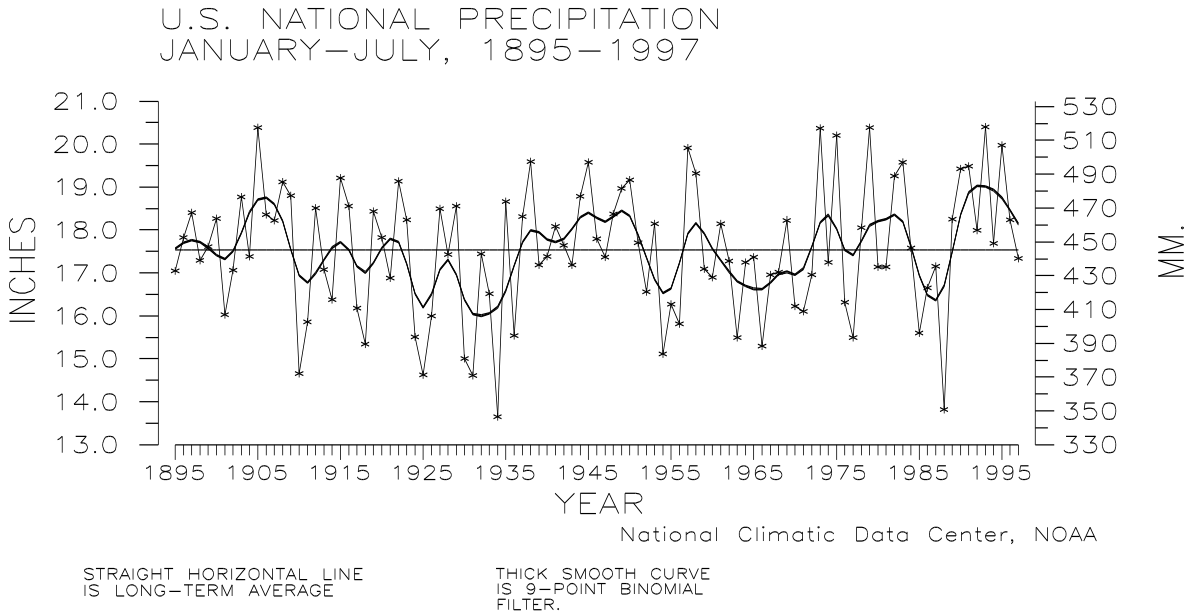

Figure 5: Preliminary precipitation data indicate that the year-to-date, January-July 1997, was the 46th driest such seven-month period since records began. About seven percent of the country was much drier than normal while just over eight percent of the country was much wetter than normal.

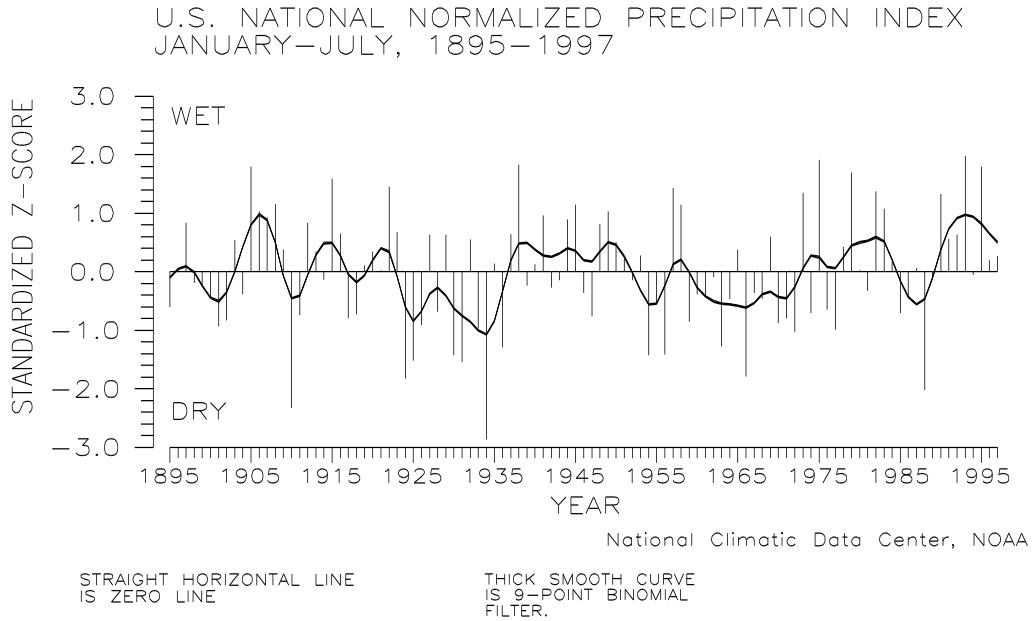

Figure 6: The preliminary national year-to-date standardized precipitation index ranked January-July 1997 as the 42nd wettest such period since 1895.

JULY 1997 STATEWIDE RANKS

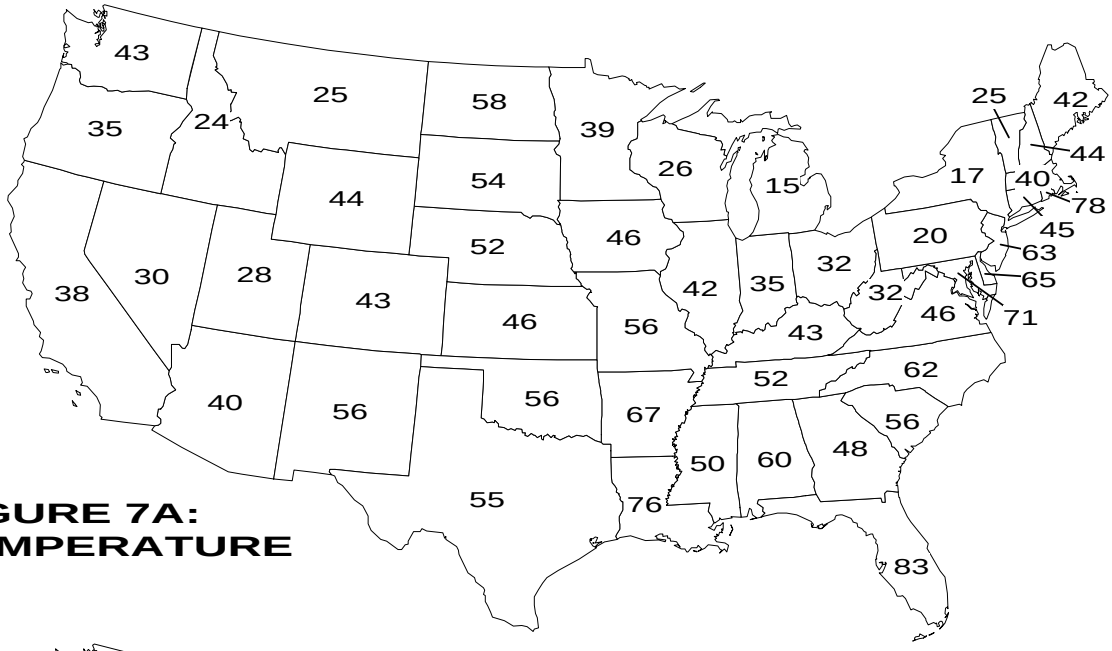

FIGURE 7A: TEMPERATURE

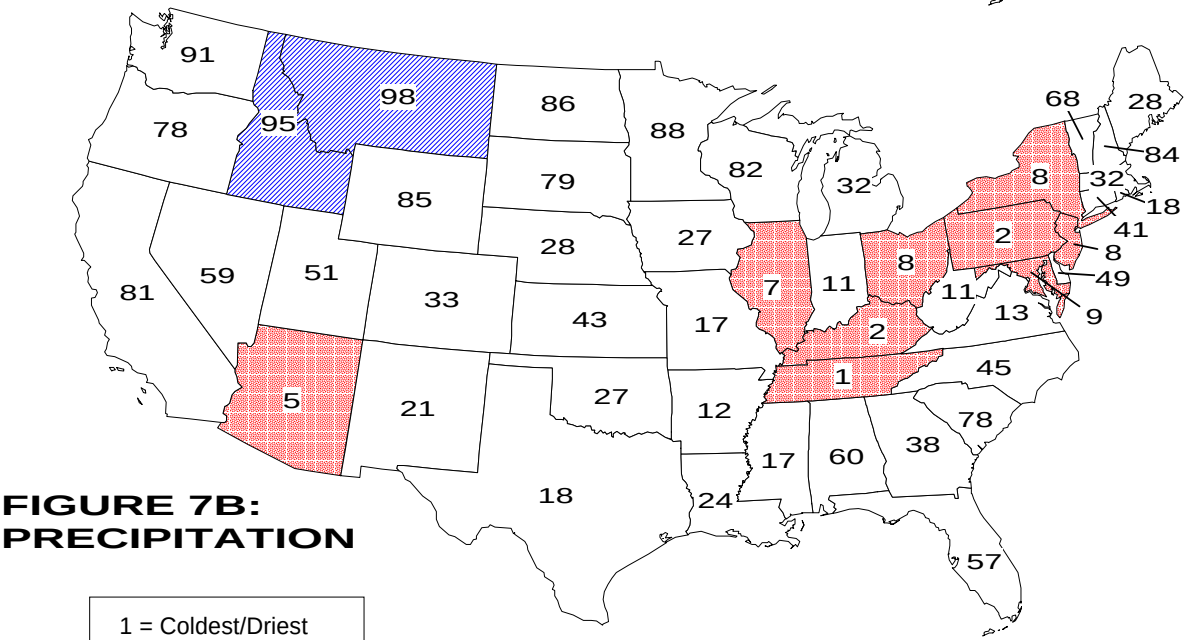

FIGURE 7B: PRECIPITATION

1 = Coldest/Driest
103 = Warmest/Wettest

National Climatic Data Center, NOAA

Temperature and Precipitation Ranks for the contiguous United States. Each state is ranked based on its data from 1895-1997. States having a rank of top ten coldest or driest (rank 1-10) or top ten warmest or wettest (rank 94-103) are shaded.

JAN-JULY 1997 STATEWIDE RANKS

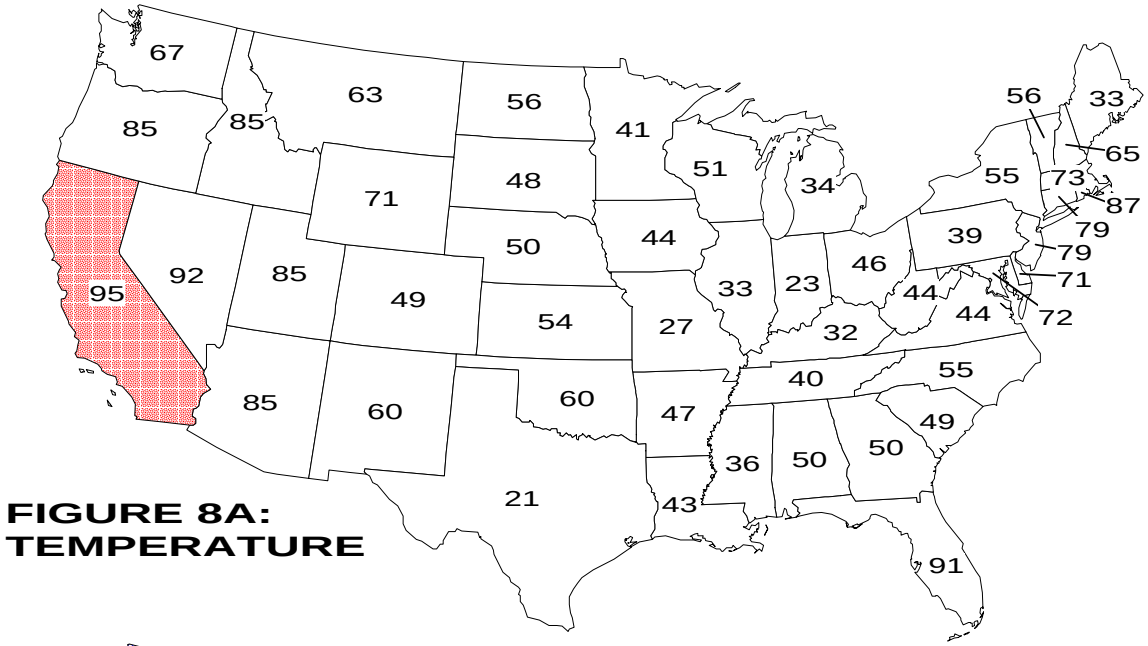

FIGURE 8A: TEMPERATURE

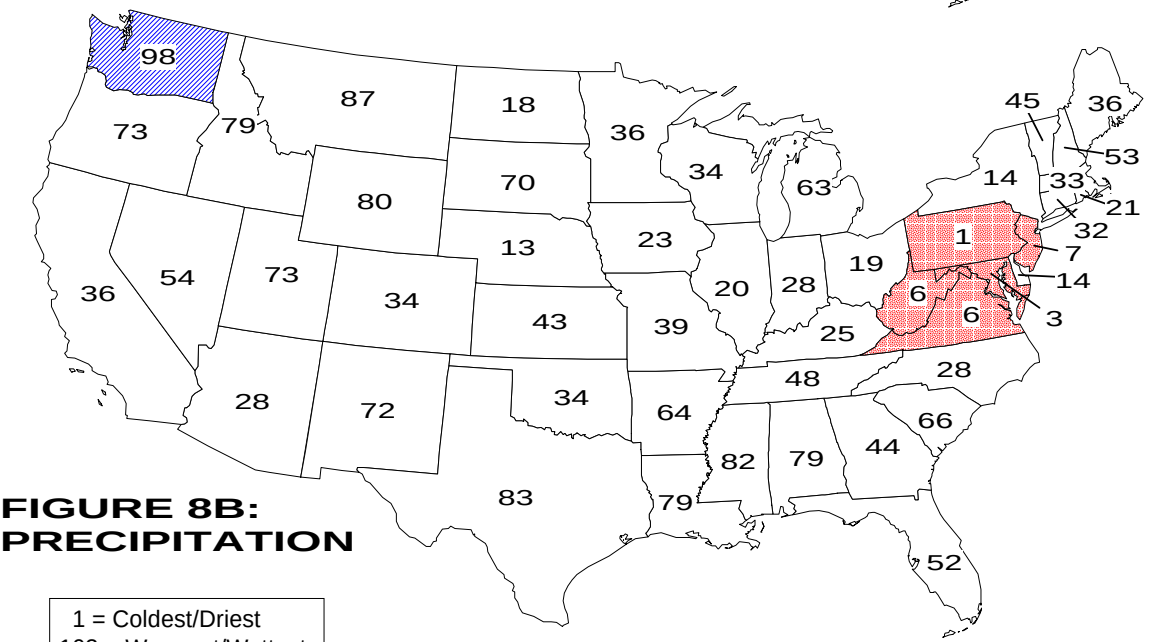

FIGURE 8B: PRECIPITATION

1 = Coldest/Driest
103 = Warmest/Wettest

National Climatic Data Center, NOAA

Temperature and Precipitation Ranks for the contiguous United States. Each state is ranked based on its data from 1895-1997. States having a rank of top ten coldest or driest (rank 1-10) or top ten warmest or wettest (rank 94-103) are shaded.

Figure 7A shows, in illustrative map form, the July 1997 temperature rankings for the 48 contiguous states. No state was within the top ten cool portion of the historical distribution while eleven were within within the cool third of the historical distribution. Likewise, no state ranked within the top ten warm portion of the historical distribution while three states ranked within the warm third of the distribution.

July 1997 state ranks for precipitation are shown in **Figure 7B**. Two states ranked within the top ten wet portion of the distribution while twelve others ranked within the wet third portion of the distribution. Nine states also ranked within the top ten dry portion of the historical distribution while twenty-six others ranked within the dry third. ***It should be noted that these July state categorical precipitation ranks are preliminary and should be used with considerable caution due to the high variability of precipitation on a small space and time scale.***

Year-to-date statewide temperature and precipitation ranks are shown in **Figures 8A and 8B**. Only one state ranked within the top ten warm portion of the historical distribution while 14 others ranked within the warm third of the distribution. No state was within the top ten cool and only seven ranked within the cool third of the distribution. Five states had their tenth driest or drier January-July period while twenty-two others ranked within the dry third portion of the distribution. No state was within the top ten wet portion of the distribution for the seven-month period while twelve ranked within the wet third of the historical distribution for the January-July period.

It should be emphasized that all of the temperature and precipitation ranks on these maps and in Table 1 are based on preliminary data. The ranks will change when the final data are processed.

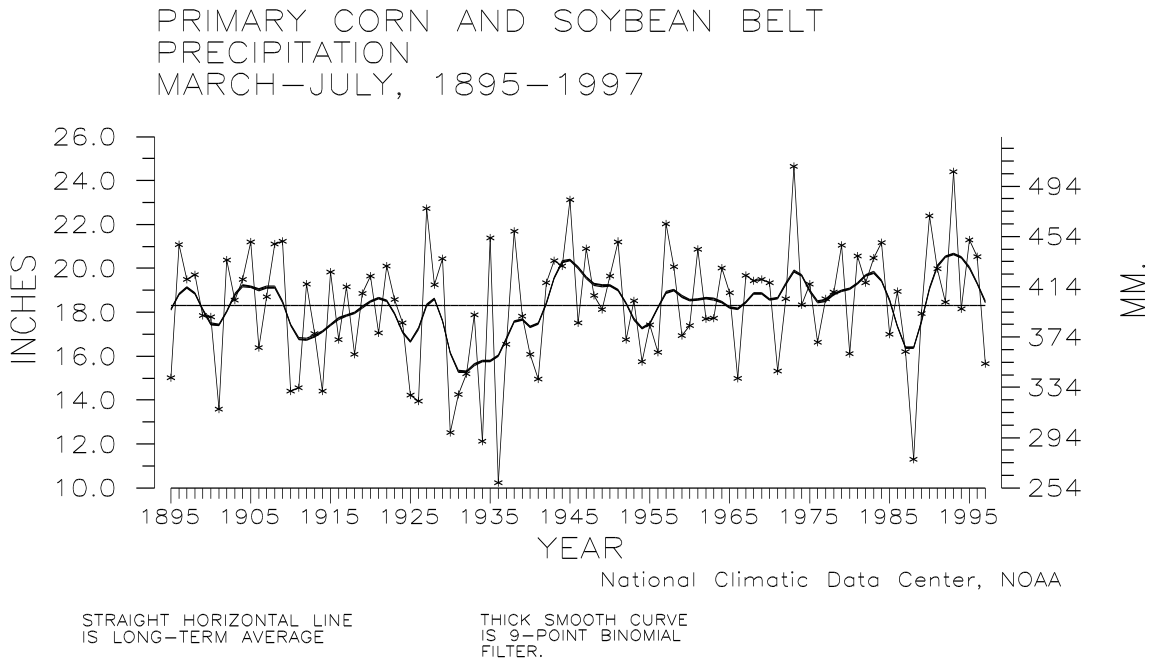

Figure 9: Preliminary data indicate that precipitation averaged across the Primary Corn and Soybean agricultural belt was below the long-term mean for the growing-season-to-date.

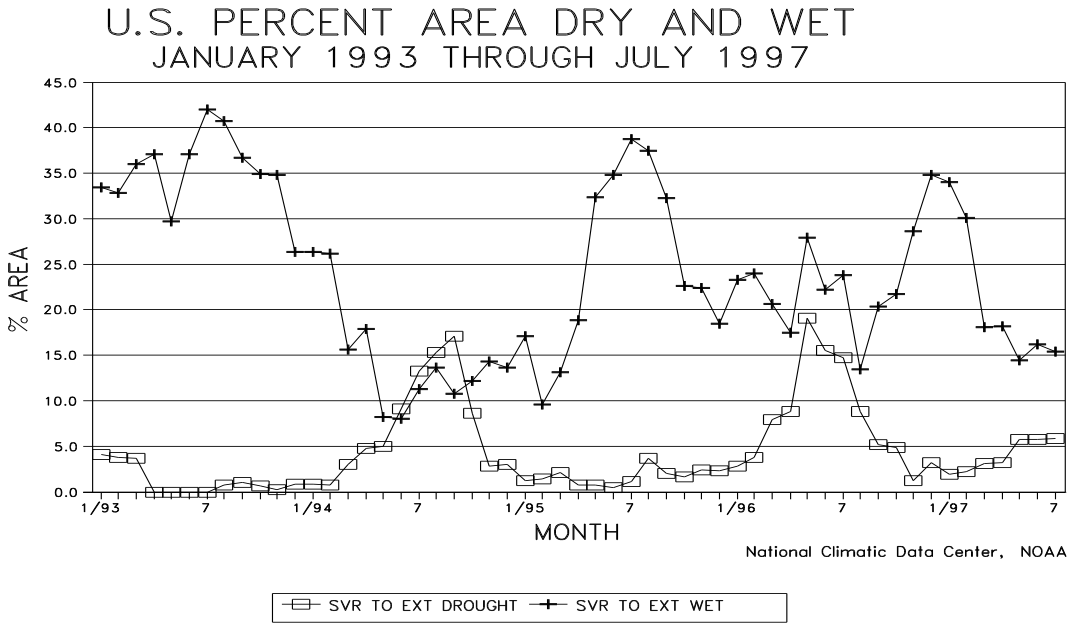

Figure 10: Long term drought coverage (as measured by the Palmer Drought Index) remained relatively low for the twelfth straight month, with July 1997 having slightly more than five percent of the country in severe to extreme drought. The percent area of the country experiencing severe to extreme wetness remained virtually unchanged during the last three months at about 16%. The core dry areas included portions of the Southwest and part of the mid-Atlantic and Northeast while core wet areas included much of the Pacific Northwest, Northern Rockies, South Dakota, and portions of the lower Mississippi valley and central Texas.

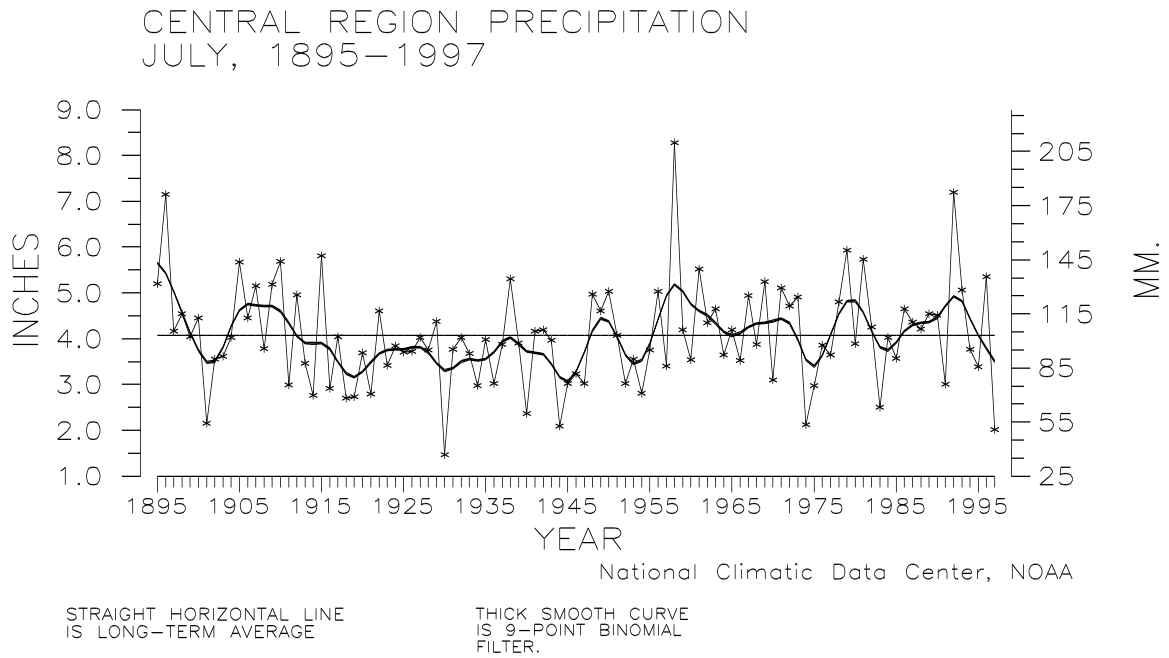

Figure 11: Preliminary data ranked July 1997 as the second driest such month on record for the Central Region. The Central Region includes the states of Kentucky, Indiana, Illinois, Missouri, Ohio, Tennessee, and West Virginia.

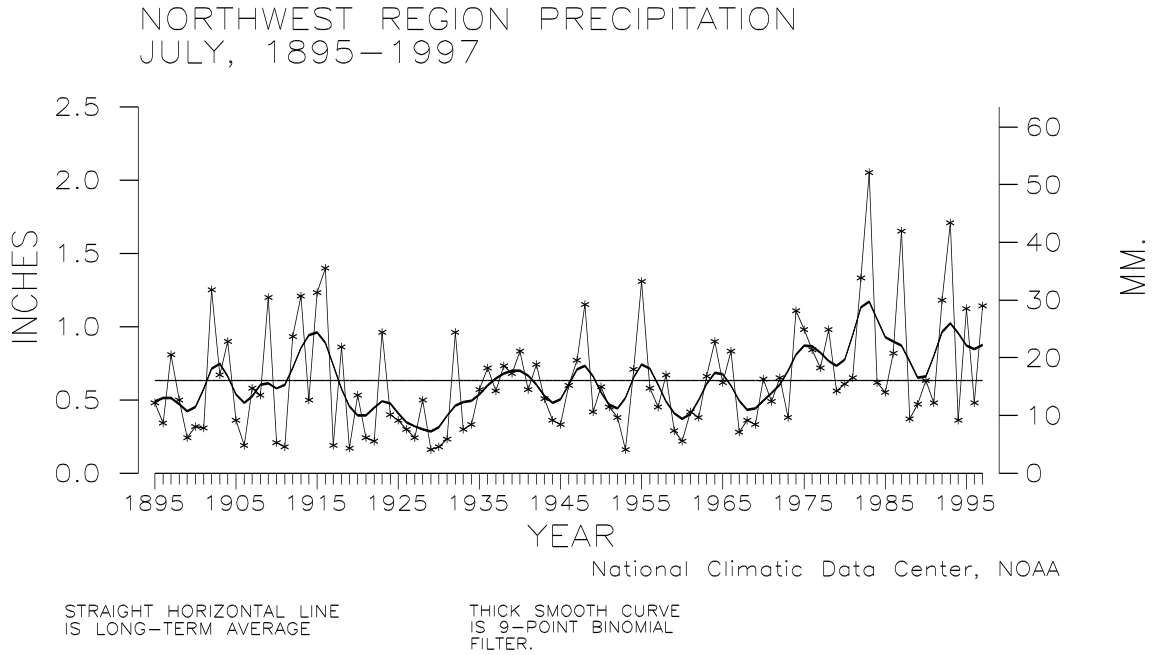

Figure 12: Preliminary data ranked July 1997 as the 13th wettest such month on record for the Northwest Region. The Northwest Region includes Idaho, Oregon, and Washington.

MONTHLY MEAN TEMP. ANOMALY JULY 1997

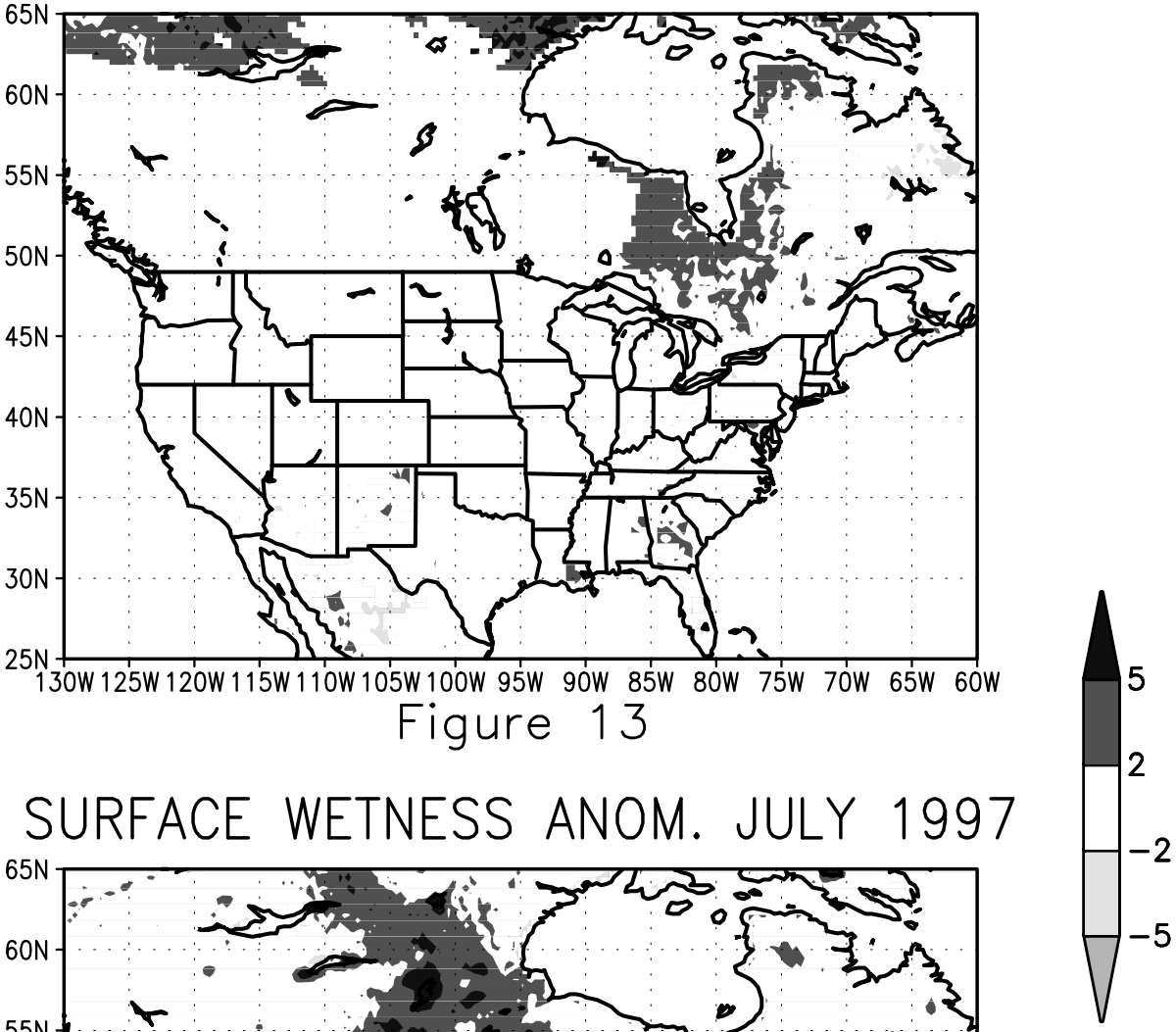

Figure 13

SURFACE WETNESS ANOM. JULY 1997

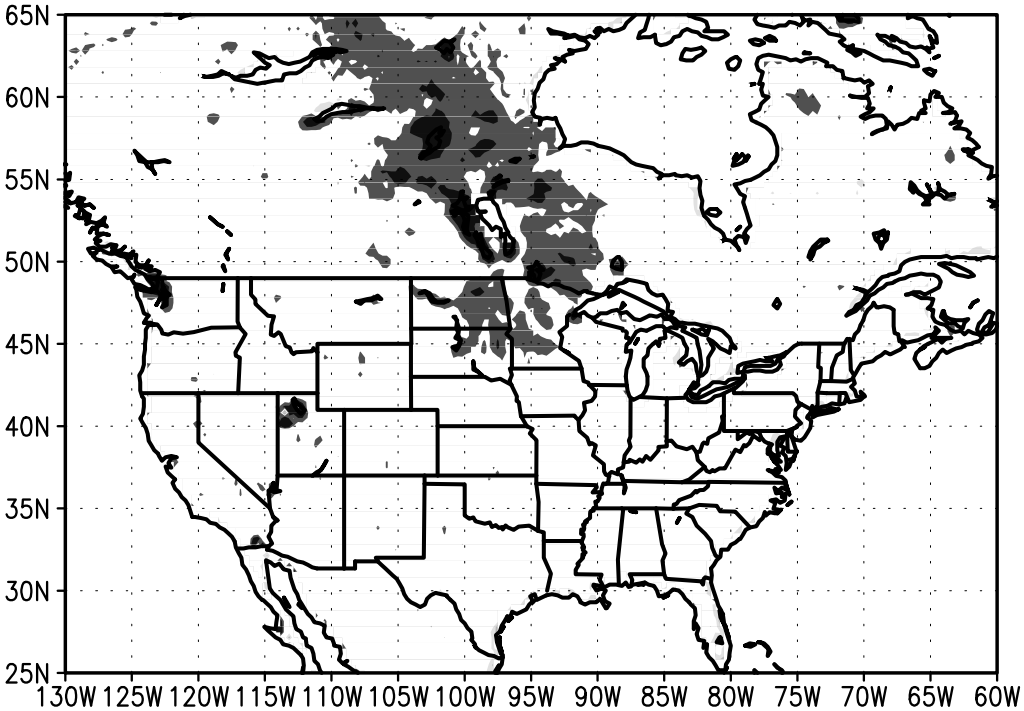

Figure 14

Figure 13 Shows the mean monthly temperature anomalies from the month of July. The base period is six years (1992-1997). This experimental product is derived from the special sensor microwave imager (SSMI), an instrument flown on a polar orbiting satellite of the defense meteorological satellite program. The May 1997 *Climate Variations Bulletin* provides a more comprehensive description of the product. Slightly cooler conditions were found in portions of the Southeast and the Southwest. The remainder of the country was near normal.

Figure 14 shows the mean monthly surface wetness anomalies from the month of July. The base period is six years (1992-1997). This experimental product is derived from the SSMI. The May 1997 *Climate Variations Bulletin* provides a more comprehensive description of the product. Above normal wetness was confined to portions of central Canada and portions of the northern Great Plains.